

**Remarks/Arguments:**

Claims 1, 2, and 4-14 are presently pending. Reconsideration is respectfully requested in view of the following remarks.

Applicants thank the Examiner and his Supervisor for the courtesy of the telephone interview conducted on March 18, 2010. During the interview, the features of claim 1 were discussed. The differences between claim 1 and Acheson (US Pat. 4,952,769) were also discussed. It was agreed that Acheson does not disclose a feeder cable as recited in claim 1. The arguments present by Applicants' representatives during the interview are set forth below.

**Claim Rejections Under 35 U.S.C. § 103**

Claims 1, 2, and 4-14 stand rejected under 35 U.S.C. 103(a) as unpatentable over Haniya et al. (US Pub. 2004/0261562) in view of Takayanagi (JP 408057648) and Acheson (US Pat. 4,952,769). It is respectfully submitted, however, that the claims are patentable over these references for the reasons set forth below.

**Claims 1, 2, and 4-8**

Applicants' invention, as recited by claim 1, includes a feature which is not disclosed, taught, or suggested by the cited art, namely:

...a wire feeder...being rotatable around a rotation axis...

...a welding torch...

...a torch cable for feeding a welding wire to the welding torch, the torch cable coupled to the wire feeder...

...a feeder cable electrically coupling between an inside of the industrial robot and the wire feeder...

...wherein the rotation axis is composed of a rotating hollow pipe shaft having a first end and a second end opposite the first end, and the feeder cable passes through the rotating hollow pipe shaft from the first end to the second end....

The wire feeder has a torch cable and a feeder cable. The torch cable feeds welding wire from the wire feeder to the welding torch. The feeder cable electrically couples the industrial

robot to the wire feeder. The wire feeder is rotatable around a rotation axis which is composed of a rotating hollow pipe shaft. The feeder cable passes through the rotating hollow pipe shaft.

The Office Action acknowledges that Haniya fails to disclose a feeder cable as recited in claim 1. However, the Office Action relies on Acheson to disclose this feature. Applicants respectfully submit that the addition of Acheson fails to make up for the deficiencies of Haniya with respect to claim 1.

Acheson is directed to a welding apparatus. As illustrated in FIGS. 1-3, for example, Acheson discloses a welding apparatus having a wire feed unit 400. Wire feed unit 400 is mounted to a mounting platform 600, and receives power through electrical wires 623' and 625'. Wire feed unit 400 includes a wire reel 410 and a wire feed roll assembly 440. Wire feed roll assembly 440 draws welding wire 411 from wire reel 410 through wire feed rotatable spindle 420. Wire feed roll assembly 440 then feeds welding wire 411 to a welding torch 10 through a flexible shaft 480. See Acheson at column 8, lines 27-36; column 15, line 65 to column 16, line 52; and FIGS. 1-3.

Applicants respectfully submit that the flexible shaft 480 of Acheson corresponds to the torch cable of claim 1. This is because the flexible shaft 480 provides welding wire 411 from the wire feed unit 400 to the welding torch 10.

Applicants respectfully submit that the electrical wires 623' and 625' of Acheson correspond to the feeder cable of claim 1. This is because electrical wires 623' and 625' provide electrical power to wire feed unit 400. Acheson fails to disclose, teach, or suggest that wire feed unit 400 is rotatable around a rotation axis which is composed of a hollow pipe shaft. Thus, Acheson also fails to disclose, teach, or suggest that electrical wires 623' and 625' pass through a rotating hollow pipe shaft.

Accordingly, Applicants respectfully submit that Haniya in view of Takayanagi and Acheson fails to disclose, teach, or suggest "a wire feeder...being rotatable around a rotation axis...a feeder cable electrically coupling between an inside of the industrial robot and the wire feeder...wherein the rotation axis is composed of a rotating hollow pipe shaft having a first end and a second end opposite the first end, and the feeder cable passes through the rotating hollow pipe shaft from the first end to the second end," as recited in claim 1.

It is because Applicants include the feature of the feeder cable passing through the rotating hollow pipe shaft that the following advantages are achieved. "With such a structure, even when feeder 16 is rotated, layout of cable 22 inside shaft 21 constituting rotation axis 17A is not affected." See the application at page 8, lines 16-17.

Accordingly, for the reasons set forth above, claim 1 is allowable over the cited art.

Claims 2 and 4-8 include all features of claim 1 from which they depend. Thus, claims 2 and 4-8 are also patentable over the art of record for the reasons set forth above.

#### **Claims 9-14**

Applicants' invention, as recited by claim 9, includes a feature which is not disclosed, taught, or suggested by the cited art, namely:

...a second arm...

...a fourth arm attached to...one side face of the second arm...

...a wire feeder provided to the second arm...

...the wire feeder is located opposite to the fourth arm relatively to a rotating axis of the first arm.

The fourth arm and the wire feeder are both attached to the second arm. The wire feeder is located opposite to the fourth arm relative to the axis of rotation.

The Office Action acknowledges that Haniya fails to disclose a wire feeder located opposite to the fourth arm. However, the Office Action relies on Takayanagi to disclose this feature. Applicants respectfully submit that the addition of Takayanagi fails to make up for the deficiencies of Haniya with respect to claim 9.

Takayanagi is directed to a welding robot. As illustrated in FIGS. 1-3, Takayanagi discloses a welding robot having a wire feeding device 7. Feeding device 7 is attached to a third arm 33 of the robot using a movable base 76. See Takayanagi at paragraph [0014], and FIGS. 1-3. Takayanagi fails to disclose, teach, or suggest a feeder cable.

Takayanagi is directed to a welding robot. As illustrated in FIGS. 1-3, Takayanagi discloses a welding robot having an second arm 32, a third arm 33, and a wire feeding device 7.

Both second arm 32 and wire feeding device 7 are attached to third arm 33. See Takayanagi at paragraph [0014], and FIGS. 1-3.

Applicants respectfully submit that second arm 32 of Takayanagi corresponds to the fourth arm of claim 9, and that third arm 33 of Takayanagi corresponds to the second arm of claim 9. Takayanagi fails to disclose, teach, or suggest whether the second arm 32 is attached to one side face of third arm 33 or the other side face of third arm 33. To the contrary, as illustrated in FIGS. 1 and 2, it appears that second arm 32 is attached to a top face of third arm 33. Thus, Takayanagi fails to disclose, teach, or suggest that the second arm 32 is located opposite the wire feed unit 7 relative to the axis of rotation.

Accordingly, Applicants respectfully submit that Haniya in view of Takayanagi and Acheson fails to disclose, teach, or suggest "a fourth arm attached to...one side face of the second arm...a wire feeder provided to the second arm...the wire feeder is located opposite to the fourth arm relatively to a rotating axis of the first arm," as recited in claim 9.

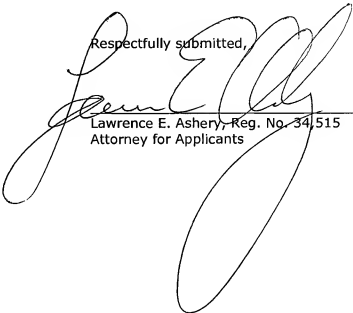
It is because Applicants include the feature of a wire feeder located opposite to the fourth arm relative to the axis of rotation that the following advantages are achieved. "Thus, fixing device 17 for fixing feeder 16 to second arm 14 can be commonly used at the time of floor-mounted use and the time of ceiling-mounted use." See the application at page 7, lines 18-20.

Accordingly, for the reasons set forth above, claim 9 is allowable over the cited art.

Claims 10-14 include all features of claim 9 from which they depend. Thus, claims 10-14 are also patentable over the art of record for the reasons set forth above.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,



Lawrence E. Ashery, Reg. No. 34,515  
Attorney for Applicants

LEA/dmw

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P.O. Box 980  
Valley Forge, PA 19482  
(610) 407-0700

637088